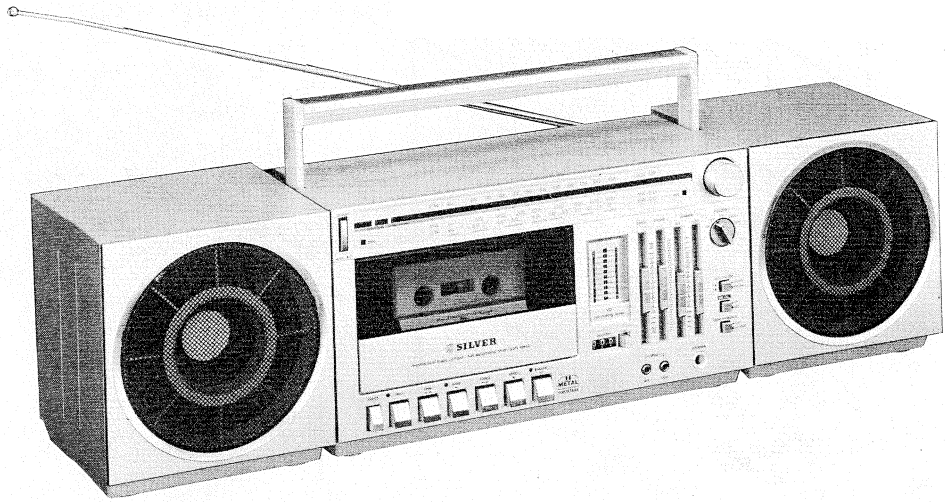
# SILVER

# *Service Manual*

## SR5000

### 3 BAND PORTABLE STEREO RADIO CASSETTE




## SPECIFICATIONS

**POWER SUPPLY**

| | |
|---|---|
| Mains: | AC110–127V/220–240V (switchable), 50/60 Hz |
| Batteries: | DC9V, 1.5V "D" size or UM-1 (A) flashlight batteries x 6 |
| Ext. DC Power: | 9V |
| **POWER CONSUMPTION:** | 24W |
| **POWER OUTPUT:** | 10W total (maximum) |
| **SPEAKERS:** | 120mm, 4 ohm, dynamic (X2) |
| **DIMENSIONS:** | 540(W) x 148(H) x 150(D) mm |
| **WEIGHT:** | 5.2 kg (with batteries) |

**RADIO SECTION**

| | |
|---|---|
| Tuning Range: | FM : 87.5–108 MHz<br>MW : 525–1605 kHz<br>SW : 3.9–12 MHz |
| Antenna System: | FM/SW: Telescopic antenna<br>MW : High-gain ferrite bar antenna |
| FM Stereo Separation: | 35 dB (at 1 kHz) |

**TAPE RECORDER SECTION**

| | |
|---|---|
| Type: | 4-track, 2-channel stereo or monaural |
| Tape Speed: | 4.75 cm/sec. |
| Rewind Time: | 90 sec. (approx.) with C60 cassette tape |
| Wow and Flutter: | 0.07% (WRMS) |
| Frequency Response: | 70 – 12,000 Hz (normal)<br>70 – 13,000 Hz ($CrO_2$)<br>70 – 14,000 Hz (metal) |
| Signal to noise ratio: | 45 dB |

**JACKS**

| | |
|---|---|
| External Mic: (left & right) | 0.1 mV/1 k ohm |
| Headphones: | 8 ohm |
| Aux Input: | 100 mV/47 k ohm |
| Tape Output: | 420 mV/10 k ohm |

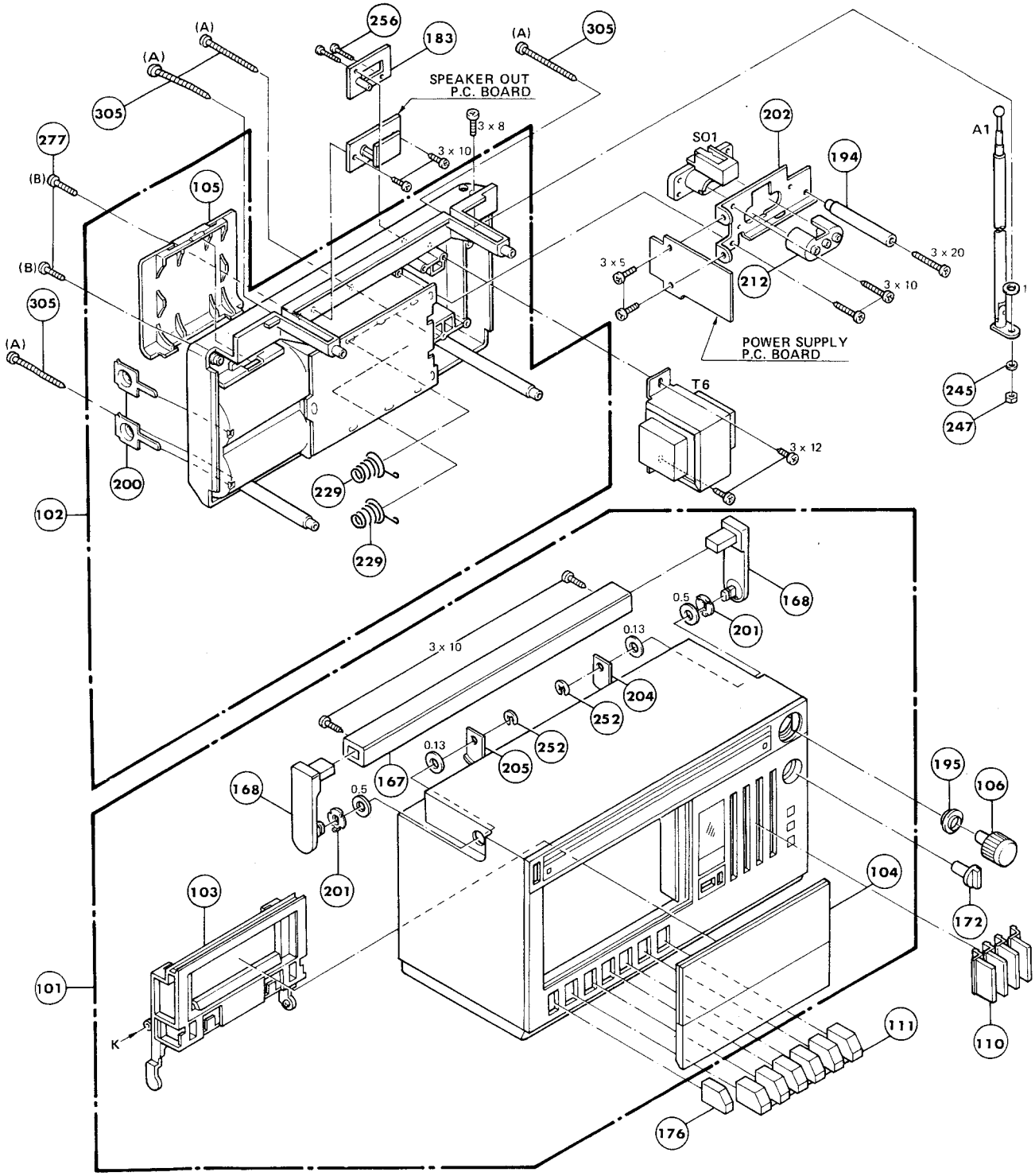
Specifications may be changed without notice.

**SHIN-SHIRASUNA ELECTRIC CORP., JAPAN**

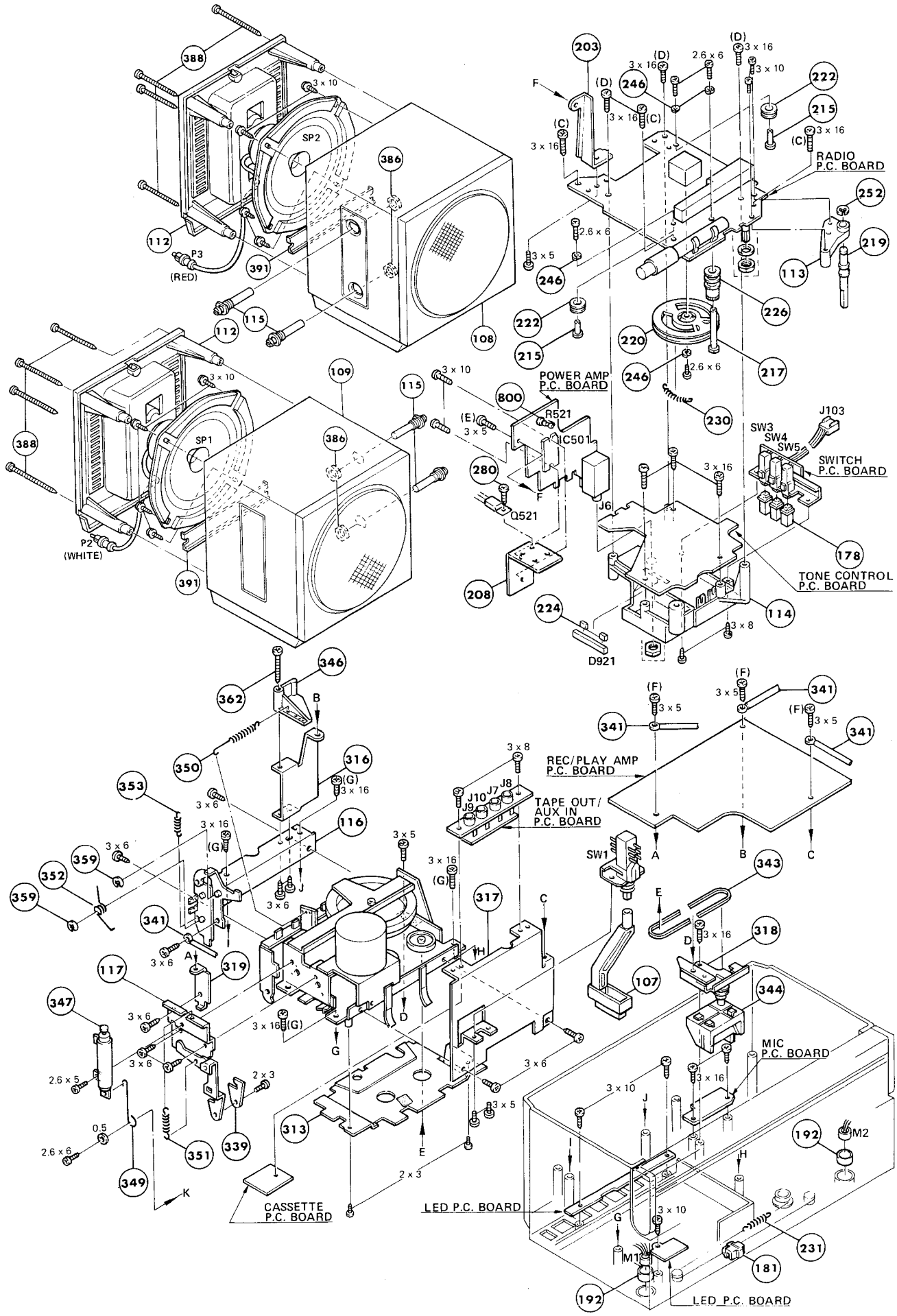
## DISASSEMBLING

1. Open the battery compartment cover and remove 4 self-tapping screws (A).
   Remove 2 self-tapping screws (B) on the cabinet back.
2. Lift up cabinet back slightly and disconnect connector of power amp. P.C. board.
3. Pull out 2 knobs ( Tuning and function selector ).
4. Remove 3 self-tapping screws (C) mountaing radio P.C. board with holder assembly.
5. Remove 3 self-tapping screws (D) and 1 self-tapping screw (E).
6. Remove 3 self-tapping screws (F) mounting rec./play amp. P.C. board.
7. Remove 4 self-tapping screws (G) and lift up cassette tape recorder mechanical assembly after removing window assembly.

## GENERAL UNIT EXPLODED VIEW




NOTE: The notation "3 x 6" means the screw diameter is 3 mm; its length is 6 mm.
The notation "0.5" means the washer thickness is 0.5 mm.


388
3 x 10
SP2
386
112
P3
(RED)
391
115
108
109
SP1
P2
(WHITE)
203
(D)
3 x 16
2.6 x 6
246
222
215
(C)
RADIO
P.C. BOARD
252
219
113
226
220
217
230
POWER AMP
P.C. BOARD
800
R521
IC501
(E)
3 x 5
280
Q521
F
J6
J103
SW3
SW4
SW5
SWITCH
P.C. BOARD
178
TONE CONTROL
P.C. BOARD
208
224
D921
114
3 x 8
346
362
B
350
316
(G)
353
3 x 6
116
359
352
341
A
319
117
347
2.6 x 5
0.5
349
K
351
339
2 x 3
313
CASSETTE
P.C. BOARD
317
C
D
G
E
J
J10
J7
J8
J9
REC/PLAY AMP
P.C. BOARD
TAPE OUT/
AUX IN
P.C. BOARD
SW1
343
318
344
107
MIC
P.C. BOARD
LED P.C. BOARD
192
M2
M1
231
181
LED P.C. BOARD

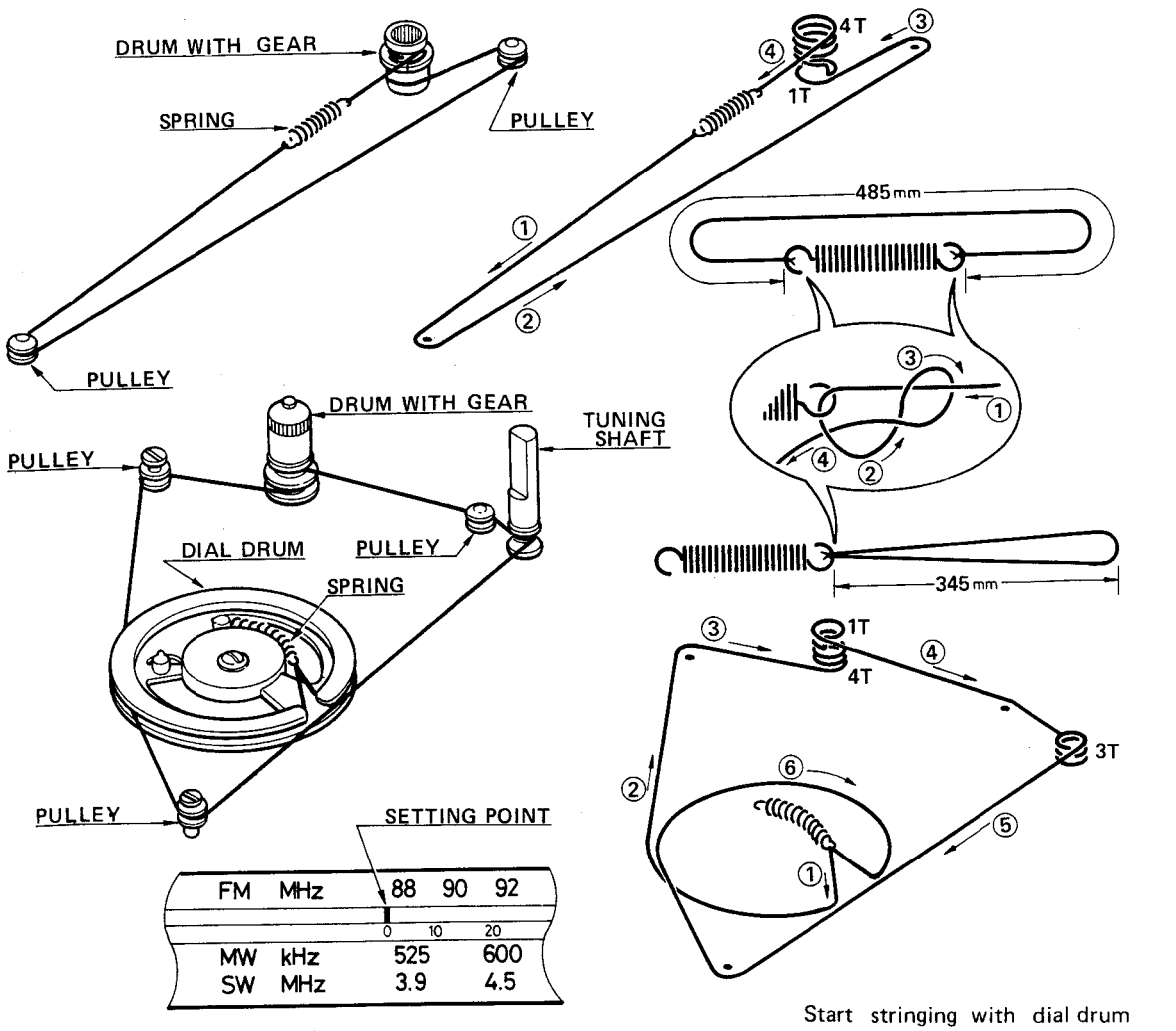
## GENERAL UNIT MECHANICAL PARTS LIST

[MODEL SR5000]

| SER. NO. | REF. NO. | DESCRIPTION | PART NO. | ORDER Q'TY | | |
|---|---|---|---|---|---|---|
| AA | 101 | Cabinet Front Assembly (includes: Cassette Compartment Slot and Handle) | A412-SR5000A | | | |
| AB | 102 | Cabinet Back Assembly (includes: Battery Compartment Cover) | A422-SR5000A | | | |
| AC | 103 | Cassette Compartment Slot Assembly | A612-SR5000A | | | |
| AD | 104 | Window Assembly | A532-SR5000A | | | |
| AE | 105 | Battery Compartment Cover Assembly | A432-SR5000A | | | |
| AF | 106 | Knob Assembly, Tuning | A632-SR5000A | | | |
| AG | 107 | Push Button Assembly, Power | A662-SR5000A | | | |
| AH | 108 | Cabinet Front Assembly, Speaker Right | A412-SR5000B | | | |
| AJ | 109 | Cabinet Front Assembly, Speaker Left | A412-SR5000C | | | |
| AK | 110 | Knob Assembly, Volume(Left, Right), Bass, Treble | A642-SR5000A | | | |
| AL | 111 | Push Button Assembly, Cassette | A662-SR5000B | | | |
| AM | 112 | Cabinet Back Assembly, Speaker Box | A422-SR5000B | | | |
| BA | 113 | Holder Assembly, Tuning | B240-SR5000A | | | |
| BB | 114 | Holder Assembly, Volume Knob | B240-SR5000B | | | |
| BC | 115 | Holder Assembly, Speaker Connector | B240-SR5000C | | | |
| BD | 116 | Bracket Assembly, Eject | B219-SR5000A | | | |
| BE | 117 | Bracket Assembly, Cassette | B219-SR5000B | | | |
| 167 | 167 | Handle | 1621-01601 | | | |
| 168 | 168 | Handle | 1622-01001 | | | |
| 172 | 172 | Knob, Function Selector | 1632-07701VC | | | |
| 176 | 176 | Push Button, Eject | 1662-07401VC | | | |
| 178 | 178 | Push Button, RIS/Mode, Metal, Tape Selector | 1662-07901 | | | |
| 181 | 181 | Dial Pointer | 1672-01501 | | | |
| 183 | 183 | Indication Plate | 1722-01501 | | | |
| 192 | 192 | Bushing, Mic. | 2114-01222 | | | |
| 194 | 194 | Spacer | 2132-292 | | | |
| 195 | 195 | Spacer, Tuning | 2132-246 | | | |
| 200 | 200 | Bracket, Battery (+) | 2219-619 | | | |
| 201 | 201 | Bracket, Handle | 2219-1280 | | | |
| 202 | 202 | Bracket, Socket | 2219-1281 | | | |
| 203 | 203 | Bracket | 2219-1286 | | | |
| 204 | 204 | Bracket, Handle | 2219-1290 | | | |
| 205 | 205 | Bracket, Handle | 2219-1314 | | | |
| 208 | 208 | Heat Sink | 2222-119 | | | |
| 212 | 212 | Holder, AC Socket | 2240-204 | | | |
| 215 | 215 | Shaft | 2601-438 | | | |
| 217 | 217 | Shaft | 2601-444 | | | |
| 219 | 219 | Tuning Shaft | 2602-060171 | | | |
| 220 | 220 | Dial Drum | 2611-046 | | | |
| 222 | 222 | Roller | 2612-5225 | | | |
| 224 | 224 | Spacer | 2132-275 | | | |
| 226 | 226 | Drum with Gear | 2623-13 | | | |
| 229 | 229 | Spring, Battery (–) | 2651-22154 | | | |
| 230 | 230 | Spring, Dial Drum | 2651-110112 | | | |
| 231 | 231 | Spring, Gear | 2651-11039 | | | |
| 234 | 234 | Spring | 2652-00232 | | | |
| 245 | 245 | Spring Washer (3.1$\phi$) | 2412-3022 | | | |
| 246 | 246 | Spring Washer (2.7$\phi$) | 2412-2622 | | | |
| 247 | 247 | Hexagon Nut (M3) | 2446-301Z9 | | | |
| 252 | 252 | E-Stop Ring (5$\phi$) | 2461-502 | | | |
| 256 | 256 | Self-Tapping Screw (2 x 12mm) | 2387-201249 | | | |
| 277 | 277 | Screw (3 x 10mm) | 2327-301047 | | | |
| 280 | 280 | Special Screw | 2320-18 | | | |
| 305 | 305 | Self-Tapping Screw (3 x 25mm) | 2347-302521 | | | |

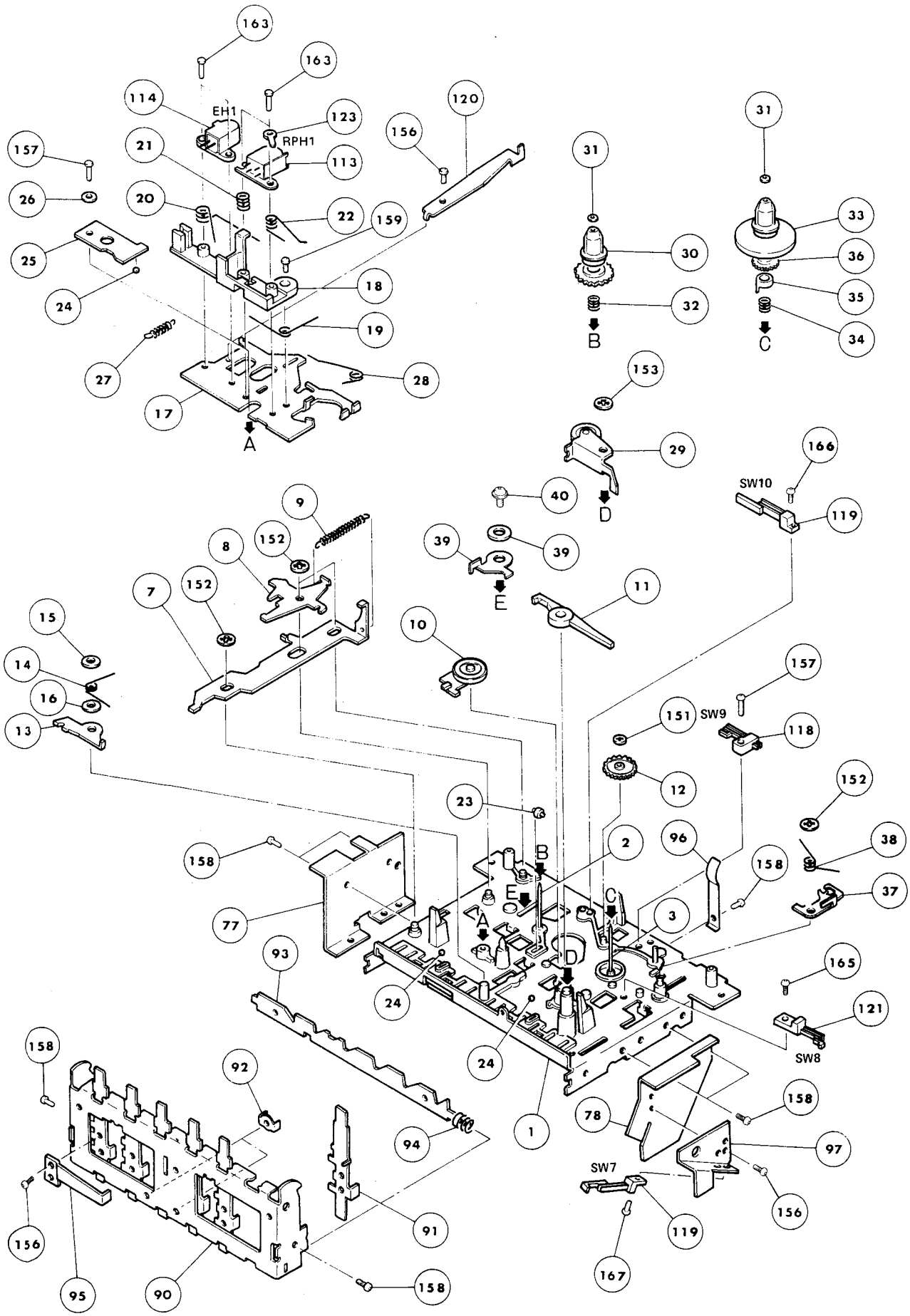
| SER. NO. | REF. NO. | DESCRIPTION | PART NO. | ORDER Q'TY | | |
|---|---|---|---|---|---|---|
| 313 | 313 | Dressing Plate | 1514-06101 | | | |
| 316 | 316 | Bracket | 2219-1282 | | | |
| 317 | 317 | Bracket | 2219-1283 | | | |
| 318 | 318 | Bracket, Tape Counter | 2219-1284 | | | |
| 319 | 319 | Bracket | 2219-1285 | | | |
| 339 | 339 | Lever | 2672-117 | | | |
| 341 | 341 | Fixing Bracket | 2218-7001 | | | |
| 343 | 343 | Belt | 2642-01446 | | | |
| 344 | 344 | Tape Counter | 3131-015012 | | | |
| 346 | 346 | Lever | 2672-107 | | | |
| 347 | 347 | Damper | 2692-3 | | | |
| 349 | 349 | Spring | 2651-0000131 | | | |
| 350 | 350 | Spring | 2651-0000132 | | | |
| 351 | 351 | Spring | 2651-1103406 | | | |
| 352 | 352 | Spring | 2651-11202 | | | |
| 353 | 353 | Spring | 2651-11091 | | | |
| 359 | 359 | E-Stop Ring (3$\phi$) | 2461-30A | | | |
| 362 | 362 | Special Screw | 2320-14 | | | |
| 386 | 386 | Special Nut | 2440-46 | | | |
| 388 | 388 | Self-Tapping Screw (3 x 25mm) | 2347-302521 | | | |
| 391 | 391 | Bracket | 2219-1376 | | | |
| 800 | 800 | Spacer | 2132-5049 | | | |

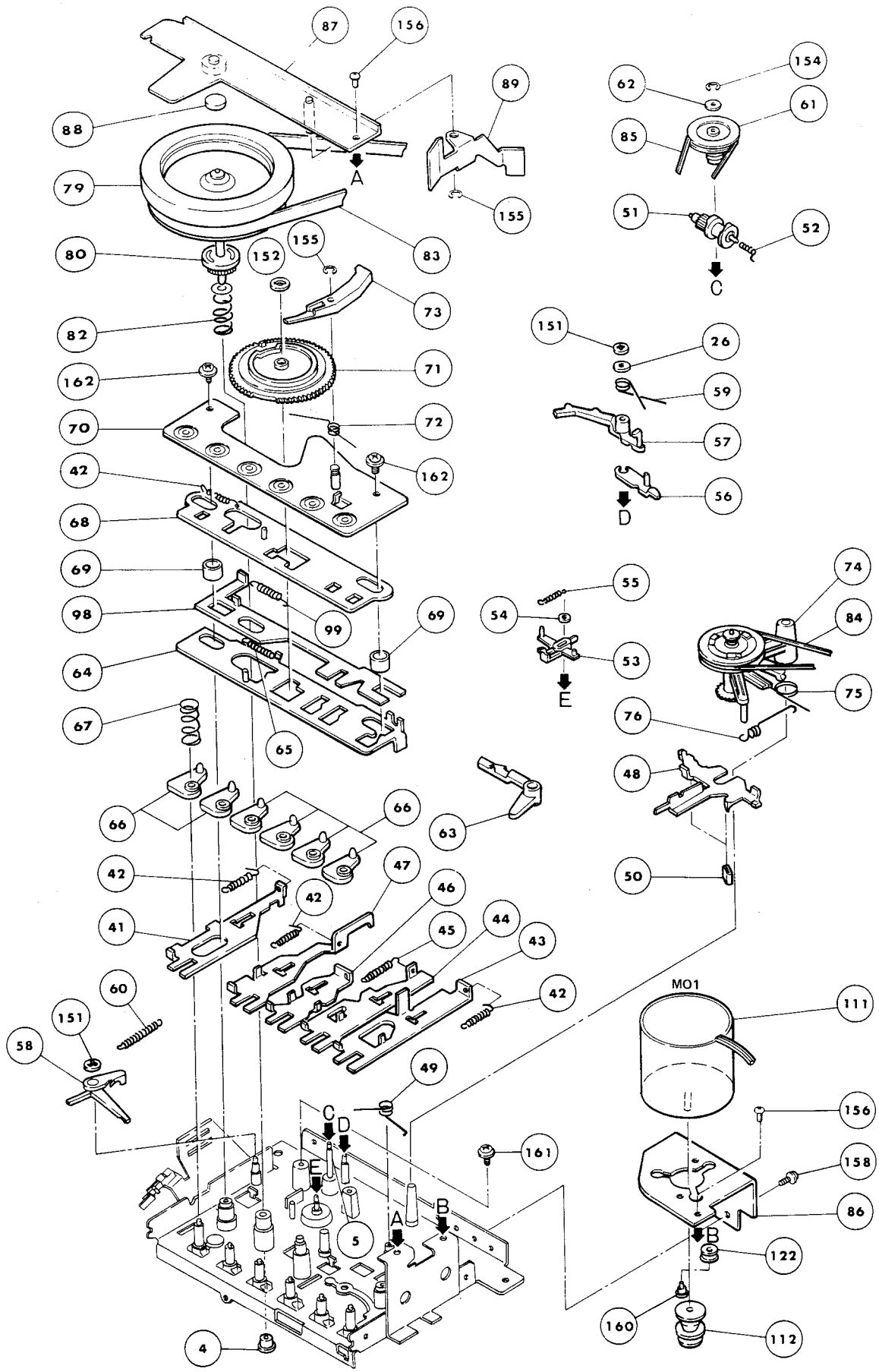
## DIAL CORD STRINGING




Start stringing with dial drum in the maximum clockwise position.

## CASSETTE TAPE RECORDER MECHANICAL EXPLODED VIEW (3112–10502)




87
156
88
89
154
62
61
85
79
155
A
51
52
C
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152
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82
151
26
59
71
162
72
70
57
42
162
56
D
68
69
74
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54
84
98
99
69
53
64
E
75
76
67
65
48
63
66
66
50
42
47
46
42
41
45
44
43
42
60
MO1
111
151
58
49
156
C
D
161
158
E
B
A
5
86
B
122
160
112
4

# CASSETTE TAPE RECORDER PARTS LIST

[MODEL SR5000]

| REF. NO. | DESCRIPTION | PART NO. | ORDER Q'TY | | |
|---|---|---|---|---|---|
| 1 | Chassis OS | PBB1077 | | | |
| 2 | Reel Shaft | PBE13656 | | | |
| 3 | Reel Shaft | PBE14455 | | | |
| 4 | Metal | PBE14456 | | | |
| 5 | Worm Shaft | PBE14453 | | | |
| 7 | Rec. Inter Plate | PBD1590 | | | |
| 8 | Stop Sub Plate | PBE14824 | | | |
| 9 | T Spring | PBE6112 | | | |
| 10 | Idler Assembly | PBE01412 | | | |
| 11 | Pause Arm | PBE14427 | | | |
| 12 | Idler Gear | PBE14337 | | | |
| 13 | Protector | PBD1591 | | | |
| 14 | Spring | PBE6054 | | | |
| 15 | Washer | PGWP42X100025 | | | |
| 16 | Washer | PGWF42A080030 | | | |
| 17 | Head Base | PBD1594 | | | |
| 18 | Head Stand | PBC1118 | | | |
| 19 | Spring | PBE6050 | | | |
| 20 | Spring | PBE6060 | | | |
| 21 | C Spring | PBE13666 | | | |
| 22 | Pinch Spring | PBE6046 | | | |
| 23 | Guide Roller | PBE14457 | | | |
| 24 | Steel Ball | PBE14460 | | | |
| 25 | Spring Plate | PBE14437 | | | |
| 26 | Washer | PGWF28A070050 | | | |
| 27 | T Spring | PBE6098 | | | |
| 28 | Spring | PBE6056 | | | |
| 29 | Pinch Arm Assembly | PBE01415 | | | |
| 30 | Supply Reel Spindle | PBE01054 | | | |
| 31 | Washer | PGWM16X040020 | | | |
| 32 | C Spring | PBE6003 | | | |
| 33 | Take-Up Reel Spindle | PBE01129 | | | |
| 34 | C Spring | PBE6009 | | | |
| 35 | Clutch Plate | PBE13723 | | | |
| 36 | Friction Plate | PBE14720 | | | |
| 37 | Lock Plate | PBD1442 | | | |
| 38 | Spring | PBE6055 | | | |
| 39 | Brake Sub Plate | PBE14825 | | | |
| 40 | Washer | PGWM45X080010 | | | |
| 41 | Pause Plate | PBE14422 | | | |
| 42 | T Spring | PBE13662 | | | |
| 43 | Rec. Plate | PBE14424 | | | |
| 44 | Rew. Plate | PBE14426 | | | |
| 45 | T Spring | PBE6057 | | | |
| 46 | Play Plate | PBE14423 | | | |
| 47 | F.F. Plate | PBE14425 | | | |
| 48 | Brake Plate | PBD1596 | | | |
| 49 | Brake Spring | PBE6047 | | | |

| REF NO. | DESCRIPTION | PART NO. | ORDER Q'TY | | |
|---|---|---|---|---|---|
| 50 | Brake Cushion | PBE14180 | | | |
| 51 | AS Cam Assembly | PBE01410 | | | |
| 52 | C Spring | PBE6097 | | | |
| 53 | Senser | PBD1450 | | | |
| 54 | Washer | PBE14117 | | | |
| 55 | T Spring | PBE14045 | | | |
| 56 | Senser arm A | PBE14705 | | | |
| 57 | Senser arm B | PBE14706 | | | |
| 58 | Senser arm C | PBE14707 | | | |
| 59 | Spring | PBE6092 | | | |
| 60 | T Spring | PBE6111 | | | |
| 61 | Worm | PBD1598 | | | |
| 62 | Washer | PGWM26X060020 | | | |
| 63 | Stop Lever | PBE14438 | | | |
| 64 | Lock Plate Assembly | PBE01434 | | | |
| 65 | T Spring | PBE6095 | | | |
| 66 | Select Arm | PBE14441 | | | |
| 67 | C Spring | PBE6048 | | | |
| 68 | Slide Plate Assembly | PBE01414 | | | |
| 69 | Collar | PBE14751 | | | |
| 70 | Holder Plate Assembly | PBE01416 | | | |
| 71 | Assist Gear | PBD1601 | | | |
| 72 | Spring | PBE6053 | | | |
| 73 | Start Lever | PBE14439 | | | |
| 74 | Tension Assembly | PBE01419 | | | |
| 75 | Spring | PBE6049 | | | |
| 76 | T Spring | PBE6093 | | | |
| 77 | Slide Plate | PBE14428 | | | |
| 78 | Slide Plate B | PBE14429 | | | |
| 79 | Flywheel | PBE14416 | | | |
| 80 | FW Gear | PBD1600 | | | |
| 81 | Washer | PGWP26X095025 | | | |
| 82 | C Spring | PBE13864 | | | |
| 83 | Belt, Motor—Flywheel | PBE5019 | | | |
| 84 | Belt | PBE5021 | | | |
| 85 | Belt | PBE5020 | | | |
| 86 | Motor Bracket | PBD1592 | | | |
| 87 | Holder A Assembly | PBE01417 | | | |
| 88 | Capstan Support | PBE14431 | | | |
| 89 | Rec. Lever | PBD1593 | | | |
| 90 | Button Holder | PBC1117 | | | |
| 91 | Button Lever, Rec., Rew., Play, f.fwd, Stop, Pause | PBE14419 | | | |
| 92 | Inter Plate | PBE14421 | | | |
| 93 | Cam Plate | PBD1587 | | | |
| 94 | C Spring | PBE6052 | | | |
| 95 | Rec. Sub Plate | PBE14420 | | | |
| 96 | Cassette Holder | PBE14432 | | | |

[MODEL SR5000]

| REF. NO. | DECRIPTION | PART NO. | ORDER Q'TY | | |
|---|---|---|---|---|---|
| 97 | SW Plate | PBE14764 | | | |
| 98 | Slide Plate | PBD1631 | | | |
| 99 | T Spring | PBE6126 | | | |
| 111(MO1) | Motor | EG510ED-9B | | | |
| 112 | Dual Pulley, Motor | PBE14442 | | | |
| 113(RPH1) | Rec./Play Head | 443-20-08 | | | |
| 114(EH1) | Erase Head | 86M-01-03 | | | |
| 118(SW9) | Leaf Switch, Motor Power | MSW1234 | | | |
| 119(SW7,10) | Leaf Switch, Play, Motor Trigger | MSW0094 | | | |
| 120 | Switch Lever | PBE14729 | | | |
| 121(SW8) | Leaf Switch, Pause | MSW0058 | | | |
| 122 | Bushing, Motor | PBE13360 | | | |
| 123 | Lug Terminal | PBE14710 | | | |
| 151 | CS Ring | PGRS20P | | | |
| 152 | CS Ring | PGRS30P | | | |
| 153 | CS Ring | PGRS40P | | | |
| 154 | E-Stop Ring | PGRE20A | | | |
| 155 | E-Stop Ring | PGRE30A | | | |
| 156 | DT Screw | PGSD10A2605 | | | |
| 157 | DT Screw | PGSD10A2610 | | | |
| 158 | DT Screw | PGSD10A3005 | | | |
| 159 | DT Screw | PGSD30A2606 | | | |
| 160 | Screw, Motor | PBE13913 | | | |
| 161 | F Tapping Screw | PGST15A2606 | | | |
| 162 | F Tapping Screw | PGST15A3006 | | | |
| 163 | Screw, Head | PGSN20A2011 | | | |
| 164 | Tapping Screw | PGST10A2606 | | | |
| 165 | DT Screw | PGSD20A2005 | | | |
| 166 | Screw | PBE14823 | | | |
| 167 | DT Screw | PGSD10A2608 | | | |

# ALIGNMENT PROCEDURES

**Equipment Required**

1. RF Signal Generator
2. AC V.T.V.M.
3. DC Voltmeter

**General**

1. Signal input must be as low as possible to avoid overload and clipping. (Use highest sensitivity of output indicator.)
2. Volume control at maximum.
3. Standard modulation is 400Hz at 30%.
4. Connect 4 ohm dummy load across external speaker jack.

| Step | Connect Signal Source To- | Connect Output Indicator To- | Set Signal Generator To- | Set Radio Dial To- | Adjust- | Adjust For- | Step |
|---|---|---|---|---|---|---|---|
| **Set Function Switch to MW** | | | | | | | |
| 1 | Loop of several turns of wire connected across generator leads. Place loop close to the MW antenna (L4). | AC V.T.V.M. across external speaker jack | 455 kHz AM Mod. | Tuning gang open | T4, T5 | Maximum output on V.T.V.M. | 1 |
| 2 | | | 525 kHz AM Mod. | 525 kHz | L6 | | 2 |
| 3 | | | 1600 kHz AM Mod. | 1600 kHz | TC5 | | 3 |
| 4 | Repeat Steps 2 and 3 for optimum sensitivity | | | | | | 4 |
| 5 | Same as above | AC V.T.V.M. across external speaker jack | 600 kHz AM Mod. | Tune for signal | L4 | Maximum output on V.T.V.M. | 5 |
| 6 | | | 1400 kHz AM Mod. | | TC3 | | 6 |
| 7 | Repeat Steps 5 and 6 for optimum sensitivity | | | | | | 7 |
| **Set Function Switch to SW** | | | | | | | |
| 1 | Place generator leads across telescopic antenna terminal. | AC V.T.V.M. across external speaker jack | 3.8 MHz AM Mod. | Tuning gang closed | L7 | Maximum output on V.T.V.M. | 1 |
| 2 | | | 12.5 MHz AM Mod. | Tuning gang open | TC6 | | 2 |
| 3 | Repeat Steps 1 and 2 for optimum sensitivity | | | | | | 3 |
| 4 | Same as above | AC V.T.V.M. across external speaker jack | 4.2 MHz AM Mod. | Tune for signal | L5 | Maximum output on V.T.V.M. | 4 |
| 5 | | | 11 MHz AM Mod. | | TC4 | | 5 |
| 6 | Repeat Steps 4 and 5 for optimum sensitivity | | | | | | 6 |
| **Set Function Switch to FM** | | | | | | | |
| 1 | Place generator leads across telescopic antenna terminal. | AC V.T.V.M. across external speaker jack | 10.7 MHz FM Mod. | Tuning gang open | T1, T2 | Maximum output on V.T.V.M. | 1 |
| 2 | | DC Voltmeter across C17 | 10.7 MHz (Unmod.) | | T3 | Zero reading, a positive or negative reading will be obtained on either side of correct setting. | 2 |
| 3 | Repeat Steps 1 and 2 for optimum sensitivity | | | | | | 3 |
| 4 | Same as above | AC V.T.V.M. across external speaker jack | 88 MHz FM Mod. | 88 MHz | L3 | Maximum output on V.T.V.M. | 4 |
| 5 | | | 108 MHz FM Mod. | 108 MHz | TC2 | | 5 |
| 6 | Repeat Steps 4 and 5 for optimum sensitivity | | | | | | 6 |
| 7 | Same as above | AC V.T.V.M. across external speaker jack | 90 MHz FM Mod. | Tune for signal | L1 | Maximum output on V.T.V.M. | 7 |
| 8 | | | 106 MHz FM Mod. | | TC1 | | 8 |
| 9 | Repeat Steps 7 and 8 for optimum sensitivity | | | | | | 9 |

### FM MULTIPLEX ADJUSTMENT

| Step | Connect Output Indicator To- | Set Radio Dial To- | Adjust- | Adjust For- |
|---|---|---|---|---|
| 1 | Set Band Selector Switch to FM position. | | | |
| 2 | Frequency counter to TP1 and TP2 | Quieting point | VR1 | 38 kHz ± 100 Hz |

## CASSETTE TAPE RECORDER ADJUSTMENT

### HEAD AZIMUTH ADJUSTMENT

**Equipment Required:** Dual AC V.T.V.M. and 10 kHz Test Tape (TEAC MTT-114)

1. Connect 4 ohm dummy load and a Dual V.T.V.M. to the External Speaker Jacks (left and right).
2. Play back the "A" side of a 10 kHz test tape. Adjust Head Azimuth Adjustment Screw so that the output indicated by the V.T.V.M. will be maximum and the difference of outputs between left and right becomes less than 2 dB.
3. Then play back the "B" side of the test tape. Adjust Head Azimuth Adjustment Screw so that the output on the V.T.V.M. will be maximum and the difference of outputs between left and right becomes less than 2 dB.
4. Repeat steps 2 and 3, and adjust Head Azimuth Adjustment Screw until the difference of outputs from side "A" and side "B" becomes less than 2 dB. In this adjustment, use the central portion of the test tape.

### TAPE SPEED ADJUSTMENT

**Equipment Required:** Frequency Counter and 3 kHz Test Tape (TEAC MTT-111)

1. Connect 4 ohm dummy load and a frequency counter to the External Speaker jack (left or right).
2. Play back a 3 kHz test tape, and adjust tape speed control on the motor assembly so that the frequency counter reads 3 kHz (± 2%). In this adjustment, use the central portion of the test tape.

### RECORD BIAS FREQUENCY ADJUSTMENT

**Equipment Required:** Frequency Counter

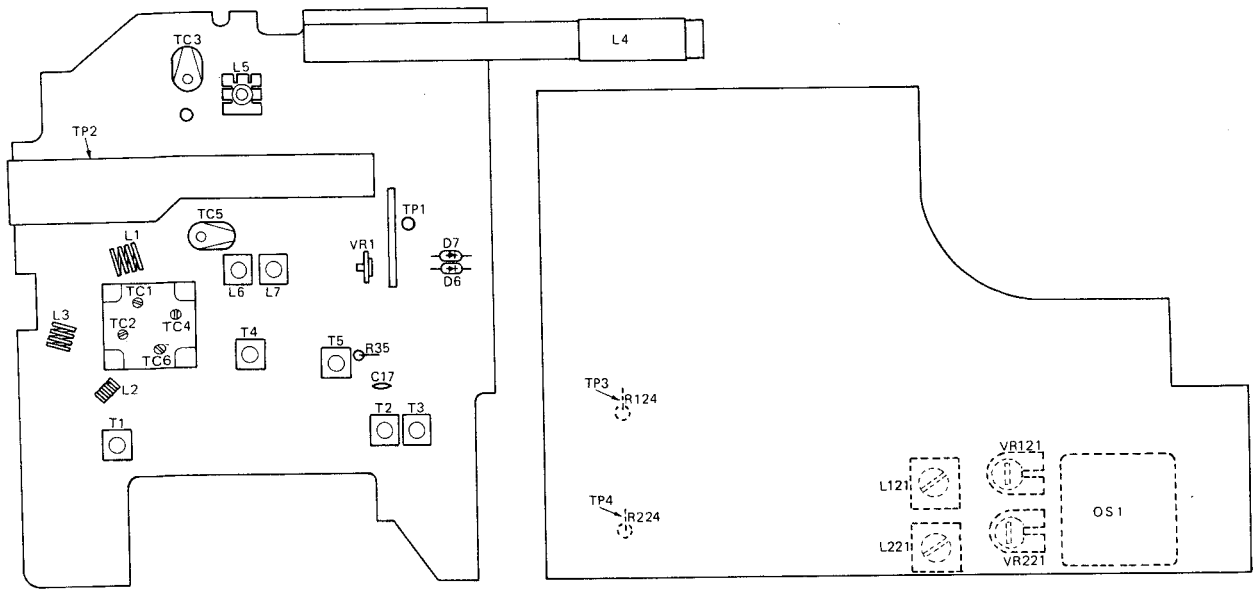
1. Connect a frequency counter to TP3 (or TP4) and TP2 (ground).
2. Set the Beat Cancel switch to position 1.
3. Start the recorder in the recording mode.
4. Adjust OS1 so that the frequency counter reads 85 kHz ± 0.5kHz.

### RECORD BIAS LEVEL ADJUSTMENT

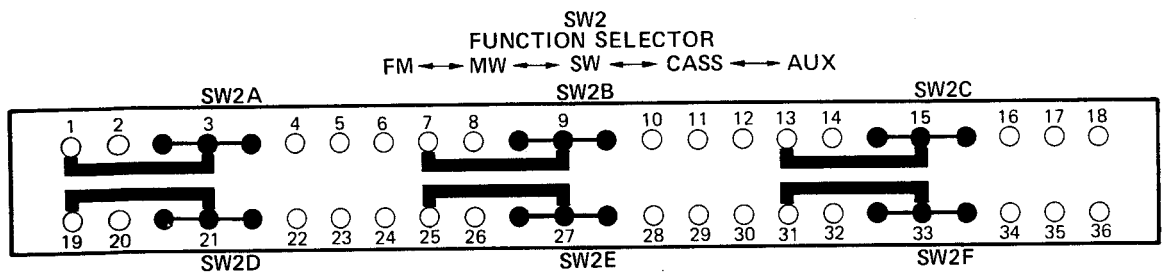
**Equipment Required:** AC V.T.V.M.

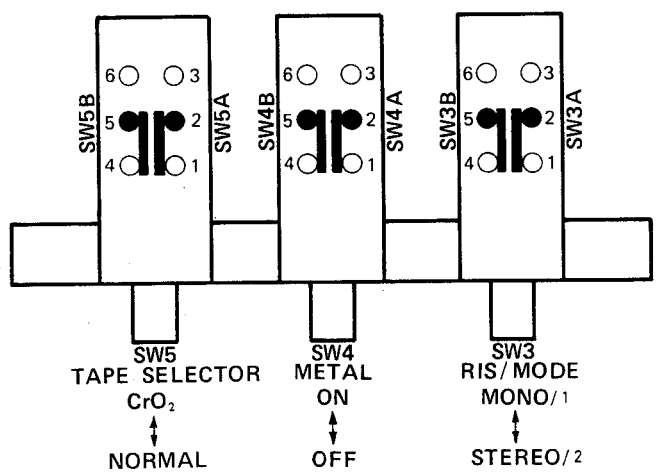
1. Connect a V.T.V.M. to TP3 and TP2 (ground).
2. Start the recorder in the recording mode. Adjust VR121 so that the V.T.V.M. reads 25 mV when the tape selector switch is normal position.
3. Connect the V.T.V.M. to TP4 and TP2 (ground).
4. Adjust VR221 so that the V.T.V.M. reads 25 mV.

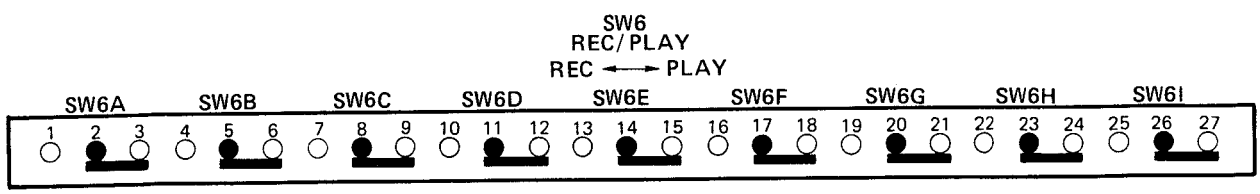
## ALIGNMENT POINTS




## SWITCH CONNECTION VIEW



## TRANSISTOR/IC ELEMENTS VOLTAGE CHART

Volts

| Q'NO. | Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q121 | Q171 | Q172 | Q221 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MODE | FM | | | TUNE ON/OFF | | | | | | | |
| COLL. | 5.2 | 5.5 | 5.6 | 0.01/3.3 | 0 | –/0 | –/6 | 1.06 | 9 | 8.4 | 1.06 |
| BASE | 1.55 | 4.2 | 3.5 | 0.5 | 0.01/3.3 | 0.25/0.6 | 5.3 | 0.6 | 8.4 | 3.7 | 0.6 |
| EMIT. | 2.2 | 3.5 | 2.8 | 0 | 0.65/4 | 0 | 6 | 0.05 | 9 | 3 | 0.05 |

Volts

| Q'NO. | Q301 Q401 | Q302 Q303 | Q521 | Q901 | Q902 | Q903 |
|---|---|---|---|---|---|---|
| MODE | | MUTING ON | | PLAY/PAUSE | | MOTOR ON |
| COLL. | 2.2 | 0 | 9 | 0.6/0 | 5/0 | 0 |
| BASE | 0.9 | 0.6 | 6.6 | 0/0.6 | 0.6/0 | 0.6 |
| EMIT. | 0.25 | 0 | 6 | 0 | 0 | 0 |

Volts

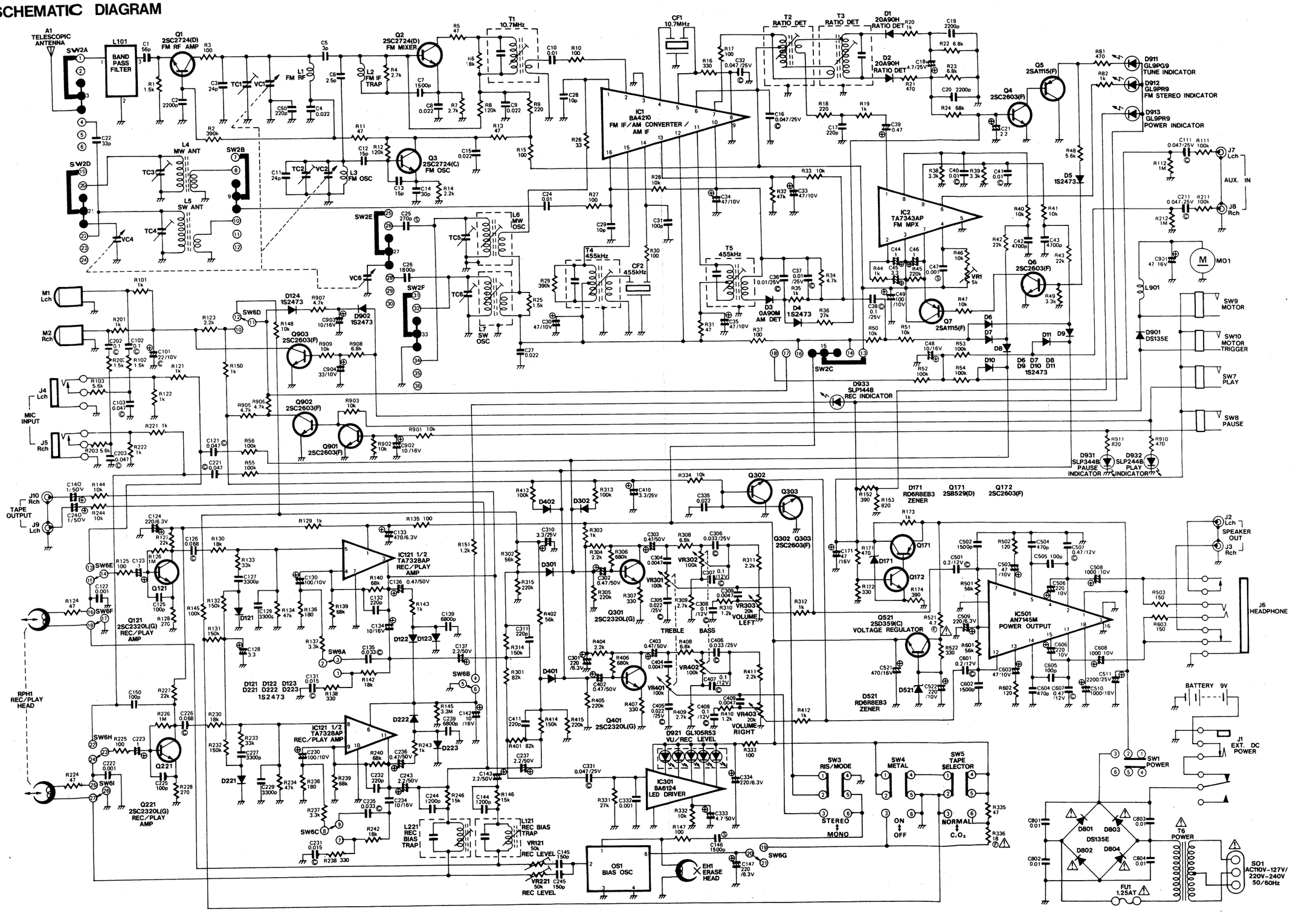
| TERMINAL NO. | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| IC1 | FM | – | 0.7 | 0 | 4.5 | 5 | 6 | 6 | 5 | 0 | – | – | – | – | – | – | – | | |
| | AM | 5.2 | – | 0 | – | – | – | – | – | 0 | 5.1 | 5.2 | 0.6 | 0.7 | 0.7 | 5.3 | 0.7 | | |
| IC121 | | 5.6 | 2 | 2.5 | 1.2 | 0 | 0 | 0 | 0 | 1.2 | 0 | 2.5 | 2 | | | | | | |
| IC301 | | 4.5 | 4.5 | 4.5 | 4.5 | 0 | 4.5 | 0.03 | 0 | 6 | | | | | | | | | |
| IC501 | | 9 | 4.5 | 0 | 8.4 | 0.13 | 4.6 | 4.5 | 2.1 | 0 | 4.6 | 0.5 | 4.5 | 4.6 | 0.13 | 8.4 | 0 | 4.5 | 8 |

■ All voltage readings to common ground are measured with V.T.V.M. under no signal conditions.

## SCHEMATIC DIAGRAM NOTES

1. All resistors are carbon unless otherwise noted.
   - (C) : Cement
   - (F) : Fuse
   - (M) : Metal
   - (S) : Solid
2. All resistance values are in ohms.
   k=1000, M=1000k
3. The wattage of resistor is 1/4W unless otherwise noted.
4. The marks of capacitors are as follows:
   - ⊣⊢ : Ceramic
   - ⊣⊢⊕ : Electrolytic
   - (A) : Al. Solid
   - (C) : Semiconductor
   - (E) : Metalized Polypropylene
   - (I) : Mica
   - (M) : Mylar
   - (P) : Polypropylene
   - (S) : Stylor
   - (T) : Tantalum Electrolytic
5. All capacitance values are in μF unless otherwise noted.
   pF=μμF
6. The DC work voltage of capacitor is 50V unless otherwise noted.
7. This is a standard schematic diagram. Some set may be modified slightly for better perfomance.

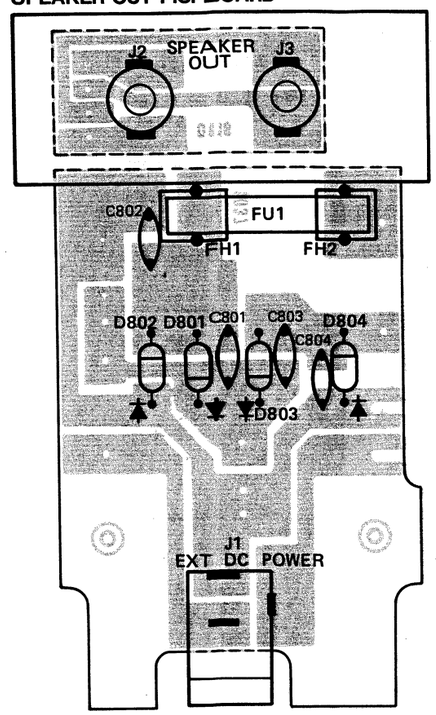
# SCHEMATIC DIAGRAM




⚠ SAFETY-REQUIREMENTS COMPONENTS IN ACCORDANCE WITH PRESENT SAFETY REGULATIONS, THESE COMPONENTS MUST ONLY BE REPLACED BY ORIGINAL PARTS.

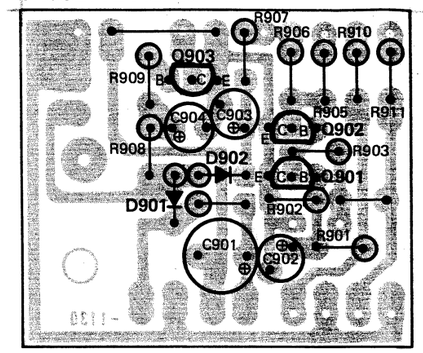
# P.C. BOARD

## SPEAKER OUT P.C. BOARD

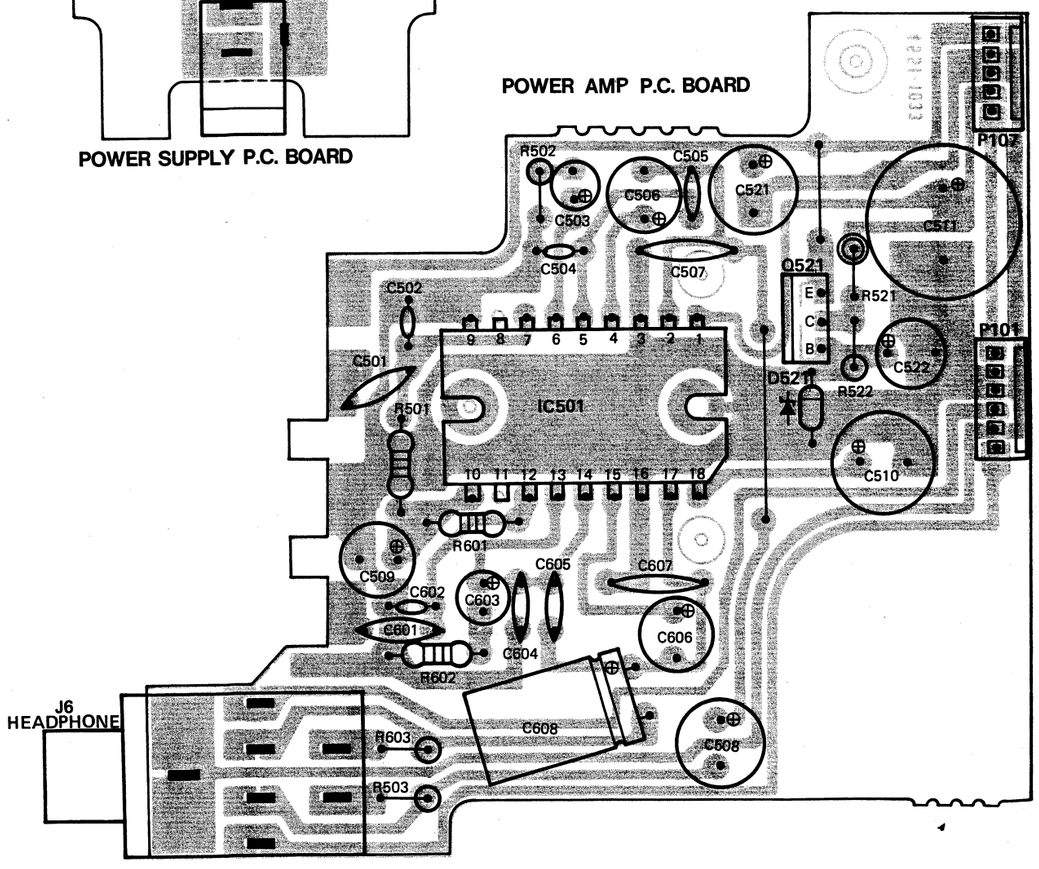



## POWER SUPPLY P.C. BOARD

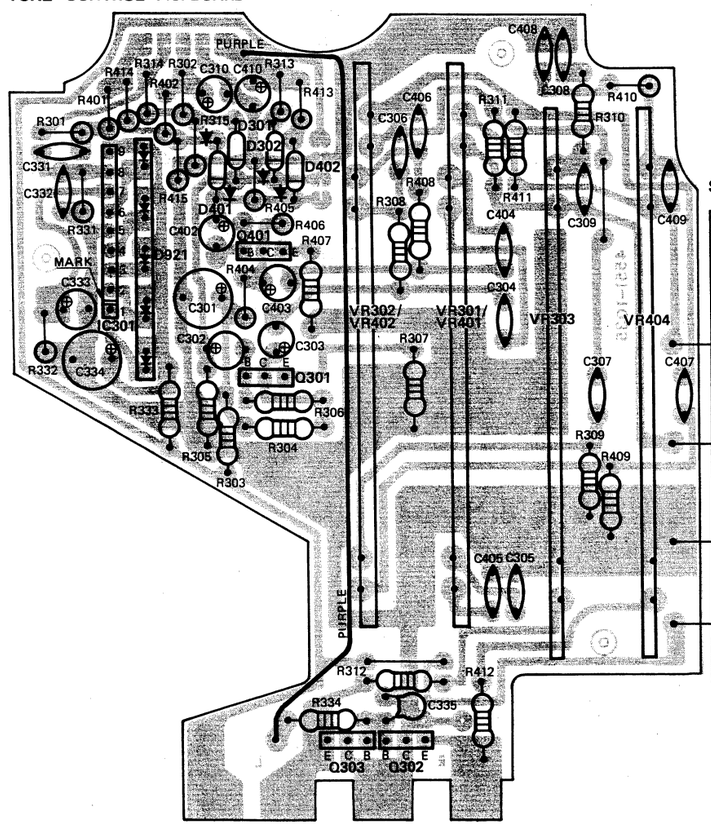
## CASSETTE P.C. BOARD



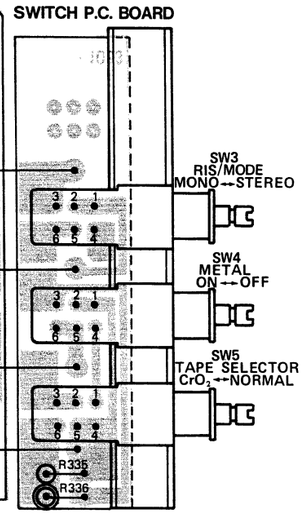

## POWER AMP P.C. BOARD



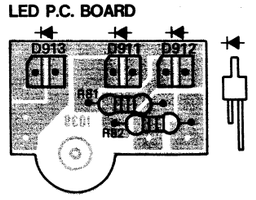

## TONE CONTROL P.C. BOARD



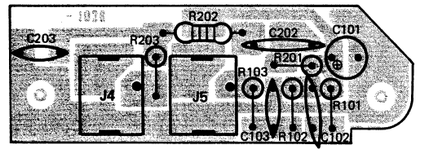

## SWITCH P.C. BOARD



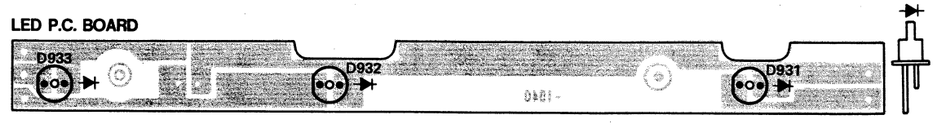

## LED P.C. BOARD




## MIC P.C. BOARD

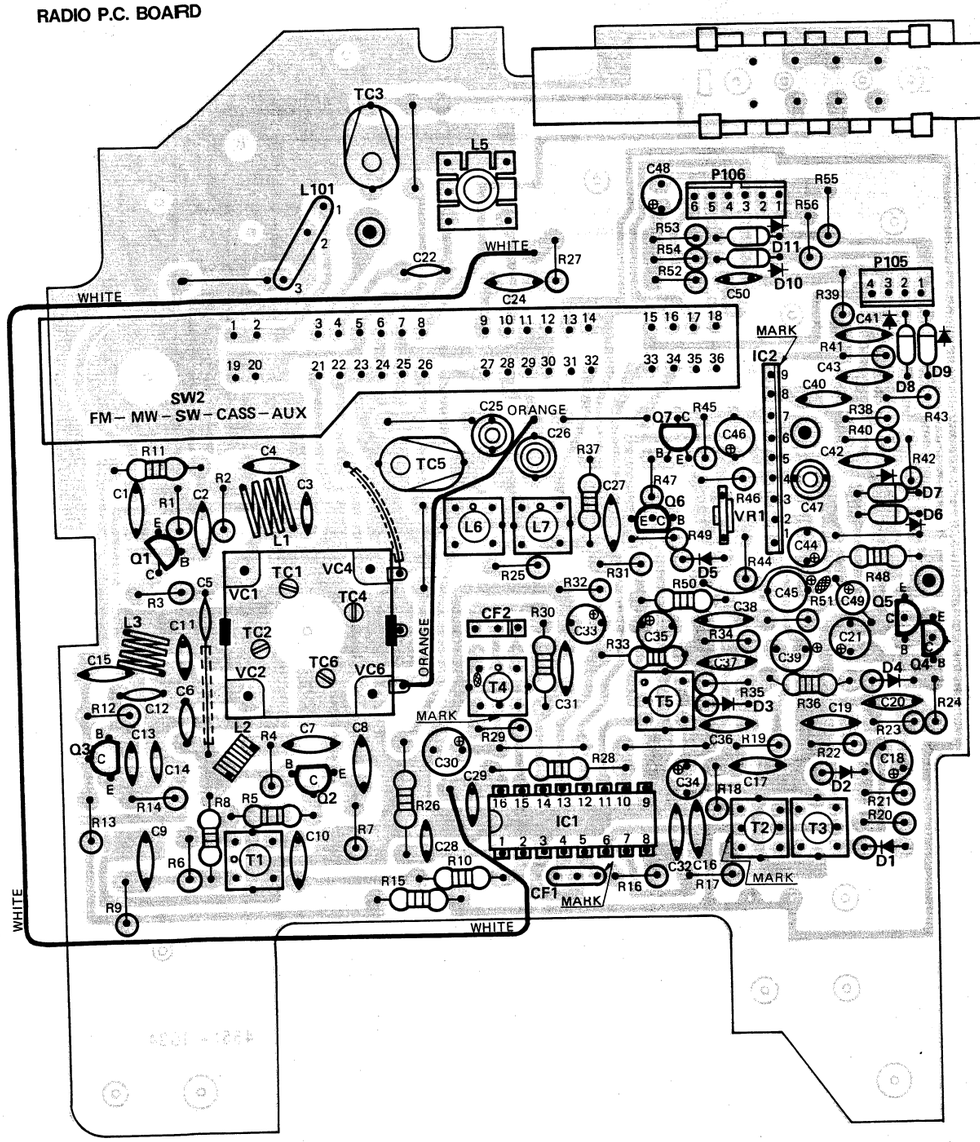



## LED P.C. BOARD

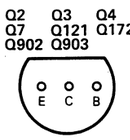


## P.C. BOARD

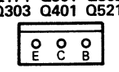
RADIO P.C. BOARD




Q1 Q2 Q3 Q4 Q5
Q6 Q7 Q121 Q172 Q221
Q901 Q902 Q903



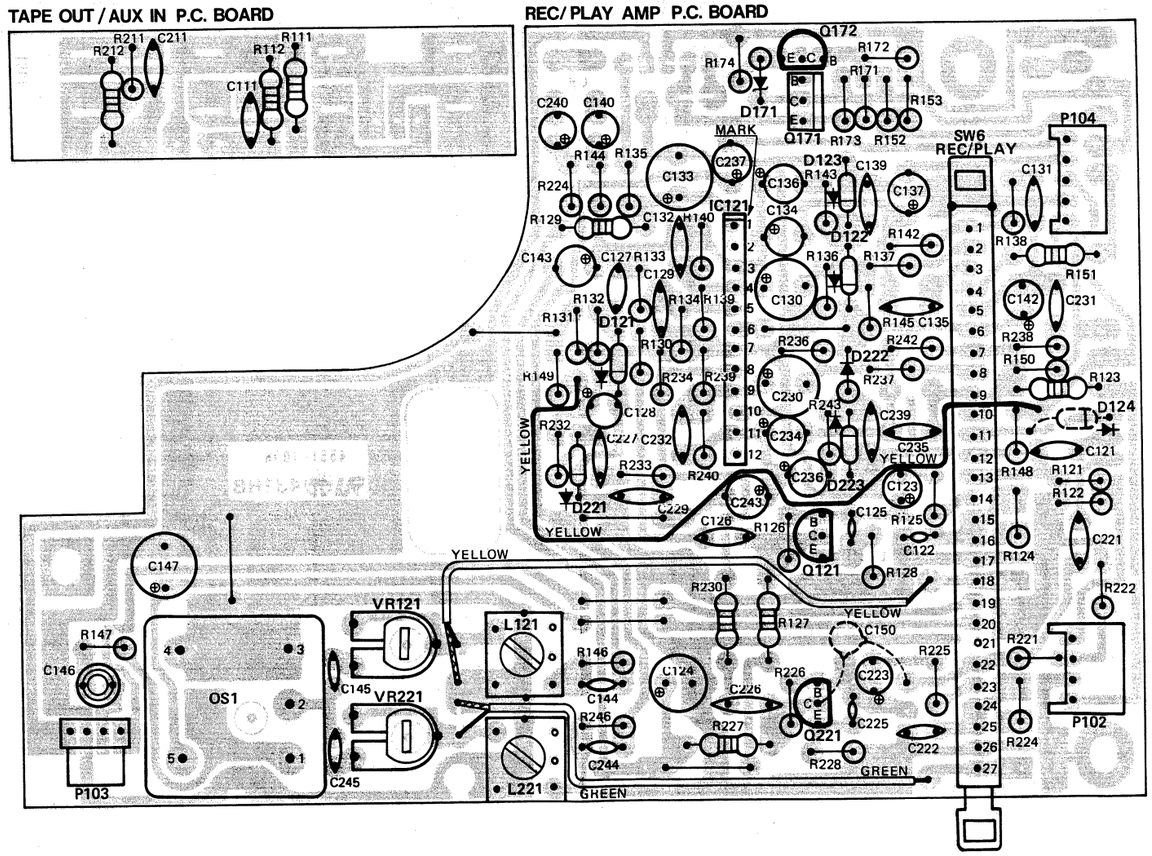

Q171 Q301 Q302
Q303 Q401 Q521



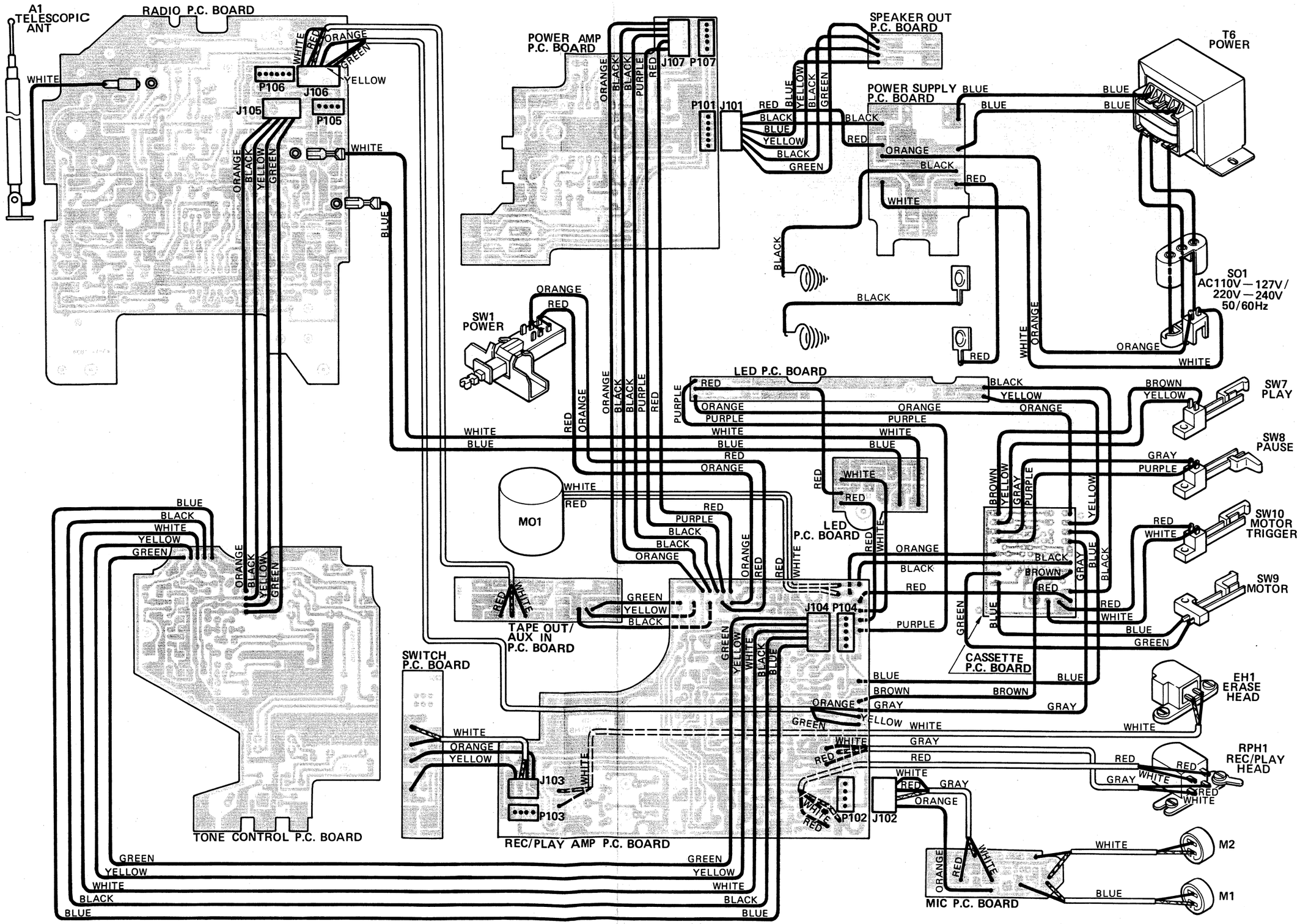

TAPE OUT / AUX IN P.C. BOARD




REC/ PLAY AMP P.C. BOARD



## WIRING DIAGRAM



# ELECTRICAL PARTS LIST

[MODEL SR5000]

| SER. NO. | REF. NO. | DESCRIPTION | PART NO. | ORDER Q'TY | | |
|---|---|---|---|---|---|---|
| | | **RESISTORS** | | | | |
| ⚠758 | R336 | 18 ohm 1/4W Fuse | 5102-1804713 | | | |
| ⚠827 | R521 | 4.7 ohm 1/4W Fuse | 5102-4R74713 | | | |
| 714 | VR1 | Variable Resistor, 5k ohm, | 5101-502083V | | | |
| 924 | VR121, 221 | Variable Resistor, 50k ohm, Rec. Level | 5101-503083H | | | |
| 755 | VR301/401 | Variable Resistor, 100k ohm, Treble | 5222-1040217 | | | |
| 754 | VR302/402 | Variable Resistor, 100k ohm, Bass | 5222-1040117 | | | |
| 753 | VR303, 403 | Variable Resistor, 20k ohm, Volume (Left, Right) | 5222-2030116 | | | |
| | | **CAPACITORS** | | | | |
| 603 | VC1/2/4/6 | Variable Capacitor (w/Trimmer Capacitor TC1/2/4/6) | 5324-0151 | | | |
| 604 | TC3, 5 | Trimmer Capacitor | 5371-27 | | | |
| | | **SEMICONDUCTORS** | | | | |
| 592 | IC1 | Integrated Circuit, FM IF/AM/AM IF Converter | 5652-BA4210 | | | |
| 712 | IC2 | Integrated Circuit, FM MPX | 5652-TA7343AP | | | |
| 832 | IC121 | Integrated Circuit, Rec./Play Amp. | 5652-TA7328AP | | | |
| 742 | IC301 | Integrated Circuit, LED Driver | 5652-BA6124 | | | |
| 802 | IC501 | Integrated Circuit, Power Output | 5652-AN7145M | | | |
| 593 | Q1, 2, | Transistor (2SC2724(D)), FM RF Amp., FM Mixer | 5613-2724 (D) | | | |
| 594 | Q3 | Transistor (2SC2724(C)), FM Osc. | 5613-2724(C) | | | |
| 595 | Q4, 6, 172, 302, 303, 901, 902, 903 | Transistor (2SC2603(F)) | 5613-2603(F) | | | |
| 596 | Q5, 7 | Transistor (2SA1115(F)), | 5611-1115(F) | | | |
| 834 | Q121, 221, 301, 401 | Transistor (2SC2320L(G)), Rec./Play Amp. | 5613-2320L(G) | | | |
| 874 | Q171 | Transistor (2SB529(D)), | 5612-529(D) | | | |
| 828 | Q521 | Transistor (2SD359(C)), Voltage Regulator | 5614-359(C) | | | |
| 597 | D1, 2 | Diode, Ratio Det. | 5631-20A90H | | | |
| 598 | D3 | Diode, AM Det. | 5631-0A90M | | | |
| 599 | D4, 5, 6, 7, 8, 9, 10, 11, 121, 122, 123, 124, 221, 222, 223, 301, 302, 401, 402, 902 | Diode, | 5631-1S2473 | | | |
| 876 | D171, 521 | Zener Diode | 5635-RD6R8EB3 | | | |
| ⚠519 | D801, 802, 803, 804 | Diode, Rectifier | 5632-DS135E | | | |
| 565 | D901 | Diode, Rectifier | 5632-DS135E | | | |
| 535 | D911 | Light Emitting Diode, Tune Indicator | 5637-GL9PG9 | | | |
| 534 | D912, 913 | Light Emitting Diode, Stereo, Power Indicator | 5637-GL9PR9 | | | |
| 747 | D921 | Light Emitting Diode, VU/Recording Level | 5637-GL105R53 | | | |
| 548 | D931 | Light Emitting Diode, Pause Indicator | 5637-SLP344B | | | |
| 542 | D932 | Light Emitting Diode, Play Indicator | 5637-SLP244B | | | |
| 541 | D933 | Light Emitting Diode, Rec. Indicator | 5637-SLP144B | | | |
| | | **COILS AND TRANSFORMERS** | | | | |
| 622 | L1 | Coil, FM RF | 5991-0775 | | | |
| 623 | L2 | Coil, FM IF Trap | 5991-7065 | | | |
| 621 | L3 | Coil, FM Osc. | 5991-0535 | | | |
| 605 | L4 | Coil, MW Ant. | 5911-218 | | | |
| 610 | L5 | Coil, SW Ant. | 5943-02110 | | | |
| 611 | L6 | Coil, MW Osc. | 5922-0188 | | | |
| 612 | L7 | Coil, SW Osc. | 5922-0198 | | | |
| 602 | L101 | Coil, Band Pass Filter | 5214-9 | | | |
| 846 | L121, 221 | Coil, Rec. Bias Trap | 5214-23 | | | |
| 846 | L401, 402 | Coil, Bias Trap | 5214-23 | | | |
| 585 | L901 | Coil, | 5995-100254 | | | |

| SER. NO. | REF. NO. | DESCRIPTION | PART NO. | ORDER Q'TY | | |
|---|---|---|---|---|---|---|
| 615 | T1 | Transformer, FM IF (10.7 MHz) | 5562-0077 | | | |
| 616 | T2 | Transformer, Ratio Det. | 5572-0026D | | | |
| 617 | T3 | Transformer, Ratio Det. | 5572-0025E | | | |
| 613 | T4 | Transformer, AM IF (455 kHz) | 5552-00610 | | | |
| 614 | T5 | Transformer, AM Det. (455 kHz) | 5552-00210 | | | |
| ⚠503 | T6 | Transformer, Power | 5584-001347 | | | |
| | | **MISCELLANEOUS** | | | | |
| 922 | OS1 | Complex, Record Bias Osc. | 6171-0404 | | | |
| 619 | CF1 | Ceramic Filter, (10.7 MHz) | 5671-012Y | | | |
| 620 | CF2 | Ceramic Filter, AM IF (455 kHz) | 5671-0122B | | | |
| 509 | SW1 | Push Switch, Power | 4431-A02025 | | | |
| 601 | SW2 | Rotary Slide Switch, Function Selector | 4412-065023 | | | |
| 757 | SW3/4/5 | Push Switch, RIS/Mode, Metal, Tape selector | 4431-03060150 | | | |
| 843 | SW6 | Slide Switch, Rec./Play | 4421-092018 | | | |
| | SW7,10 | Spring Switch, Play, Motor Trigger | MSW0094 | | | |
| | SW8 | Spring Switch, Pause | MSW0058 | | | |
| | SW9 | Spring Switch, Motor | MSW1234 | | | |
| 507 | J1 | Jack, Ext. DC Power | 4451-0077 | | | |
| 526 | J2, 3 | Jack, Speaker Out | 4482-0116 | | | |
| 548 | J4, 5 | Jack, Mic. Input | 4451-00102 | | | |
| 804 | J6 | Jack, Headphone | 4451-14117 | | | |
| 937 | J7/8/9/10 | Jack, Aux In (Lch., Rch.) Tape Out (Lch., Rch.) | 4484-29 | | | |
| 527 | J101 | Connector w/Lead Wire, 6-pin (Female) | 4163-00371 | | | |
| 558 | J102 | Connector w/Lead Wire, 4-pin (Female) | 4163-00172 | | | |
| 797 | J103 | Connector w/Lead Wire, 4-pin (Female) | 4163-00471 | | | |
| 798 | J104 | Connector w/Lead Wire, 5-pin (Female) | 4163-00272 | | | |
| 799 | J105 | Connector w/Lead Wire, 4-pin (Female) | 4163-00571 | | | |
| 889 | J106 | Connector w/Lead Wire, 6-pin (Female) | 4163-00671 | | | |
| 890 | J107 | Connector w/Lead Wire, 5-pin (Female) | 4163-00771 | | | |
| 807 | P101 | Connector, 6-pin (Male) | 4443-060178 | | | |
| 887 | P102 | Connector, 4-pin (Male) | 4443-040179 | | | |
| 885 | P103 | Connector, 4-pin (Male) | 4443-040180 | | | |
| 886 | P104 | Connector, 5-pin (Male) | 4443-050179 | | | |
| 673 | P105 | Connector, 4-pin (Male) | 4443-040178 | | | |
| 674 | P106 | Connector, 6-pin (Male) | 4443-060178 | | | |
| 806 | P107 | Connector, 5-pin (Male) | 4443-050178 | | | |
| ⚠524 | FU1 | Fuse, 1.25A | 5732-12202 | | | |
| 523 | FH1, 2 | Fuse Holder | 4472-414 | | | |
| ⚠505 | SO1 | Socket | 4474-91 | | | |
| 557 | M1, 2 | Electret Microphone | 5896-E015 | | | |
| 670 | FB1 | Ferrite Beads | 5597-3 | | | |
| 144 | A1 | Telescopic Antenna | 1392-0600131 | | | |
| 389 | SP1, 2 | Dynamic Speaker | 5811-C1200128 | | | |
| ⚠119 | P1 | AC Line Cord (w/Plug) | 4161-0162 | | | |
| 390 | P2 | Plug with Cord | 4161-02136 | | | |
| 420 | P3 | Plug with Cord | 4161-01136 | | | |
| | RPH1 | Rec./Play Head | 443-20-08 | | | |
| | EH1 | Erase Head | 86M-01-03 | | | |
| | MO1 | DC Motor | EG510ED-2B | | | |

⚠ **SAFETY-REQUIREMENTS COMPONENTS IN ACCORDANCE WITH PRESENT SAFETY REGULATIONS, THESE COMPONENTS MUST ONLY BE REPLACED BY ORIGINAL PARTS.**

**NOTE: When spare parts are needed, type the quantity desired in the "ORDER Q'TY" column of the order form in this Service Manual and send copy.**